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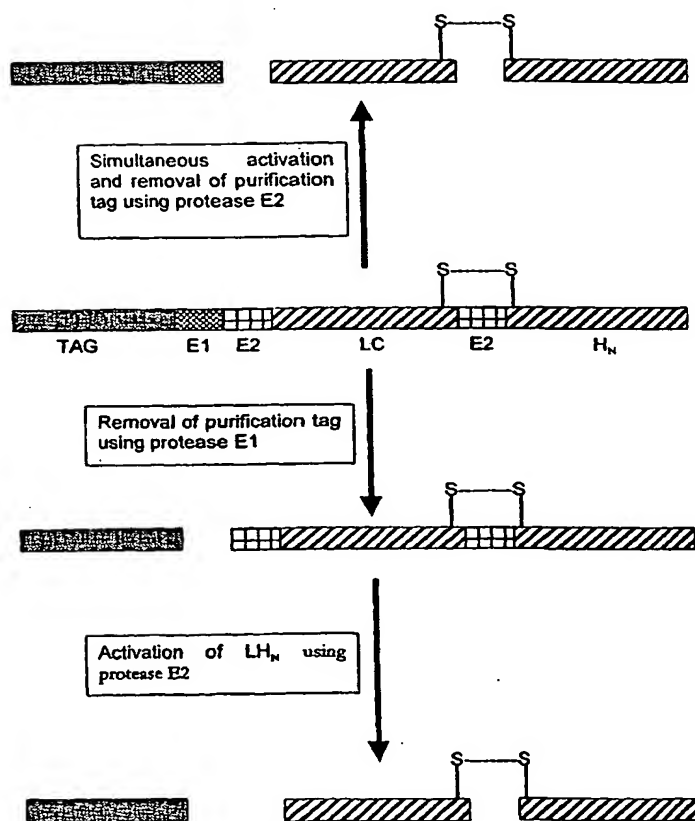
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(54) Title: RECOMBINANT TOXIN FRAGMENTS



(57) Abstract: A single polypeptide is provided which comprises first and second domains. The first domain enables the polypeptide to cleave one or more vesicle or plasma-membrane associated proteins essential to exocytosis, and the second domain enables the polypeptide to be translocated into a target cell or increases the solubility of the polypeptide, or both. The polypeptide thus combines useful properties of a clostridial toxin, such as a botulinum or tetanus toxin, without the toxicity associated with the natural molecule. The polypeptide can also contain a third domain that targets it to a specific cell, rendering the polypeptide useful in inhibition of exocytosis in target cells. Fusion proteins comprising the polypeptide, nucleic acids encoding the polypeptide and methods of making the polypeptide are also provided. Controlled activation of the polypeptide, is possible and the polypeptide can be incorporated into vaccines and toxin assays.